VAMP2-SDA and VAMP2-MDA

2U Multi-Format Multi-Channel Audio/Video Monitor

with Two SDI or HD/SD-SDI and Two CVBS Video Inputs,
HD/SD-SDI, AES, Analog Audio Inputs w/ Loop-Thru,
Analog Stereo Outputs of Selected Source, 4" LCD
Display, and Four 53-Segment Level Meters

(Document P/N **821667** Rev-**A)**

User Manual

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Important Safety Instructions

1) **Read these instructions.**
2) **Keep these instructions.**
3) **Heed all warnings.**
4) **Follow all instructions.**
5) **Do not use this apparatus near water.**
6) **Clean only with dry cloth.**
7) **Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.**
8) **Do not install near any heat source such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.**
9) **Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.**
10) **Protect the power cord from being walked on or pinched, particularly at plugs convenience receptacles and the point where they exit from the apparatus.**
11) **Only use attachments/accessories specified by the manufacturer.**
12) **Use only with the cart stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.**
13) **Unplug this apparatus during lightning storms or when unused for long periods of time.**
14) **Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as when power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.**
15) **Do not expose this apparatus to rain or moisture.**
16) **The apparatus shall be connected to a mains socket outlet with a protective earthing connection.**

CAUTION!

In products featuring an audio amplifier and speakers, the surface at the side of the unit, where the audio amplifier heat sink is internally attached, may get very hot after extended operation. When operating the unit excercise caution when touching this surface and ensure that external materials which may be adversely affected by heat are not in contact with it. There is a Hot Surface label (see diagram) attached to the aforementioned surface of the product.

Introduction

Congratulations on your selection of a PANORAMAdtv video monitor unit. We are confident it represents the best performance and value available, and we guarantee your satisfaction with it.

If you have questions or comments you may contact us at:

PANORAMAdtv
31055 Huntwood Avenue
Hayward, CA 94544
Phone: **(510) 589-5676** Fax: **(510) 870-0811**
US Toll-Free: **1-888-596-4537**
web: **www.panoramadtv.com** e-mail: **sales@panoramadtv.com**

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Section 1

General Features and Specifications

Description

Features

Applications

General Specifications

NOTE: Throughout the manual, the following terms are used to refer to **Serial Digital** (**SDI**) signals:

- **SD-SDI** = refers only to ***standard*** **SDI** (270 MB/s).
- **HD-SDI** = refers only to ***high-definition*** **SDI** (1.5 GB/s).
- **SDI** = refers to *either* **standard SDI** (SD-SDI, 270 MB/s) or **high defintion SDI** (HD-SDI, 1.5 GB/s).

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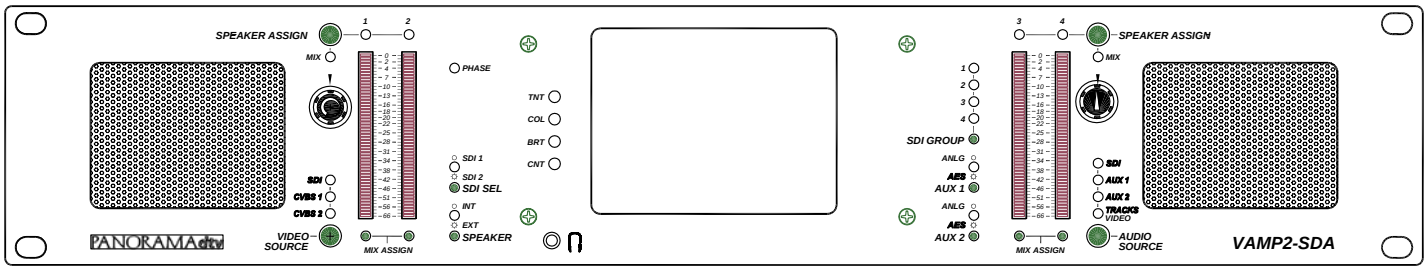
PANORAMA dtv
THE VIDEO DIVISION OF WOHLER TECHNOLOGIES

VAMP2-SDA and VAMP2-MDA

2U Multi-Format Video Multi-Channel Audio Monitor



VAMP2-SDA Front Panel

Description

The **VAMP2-SDA** and **VAMP2-MDA** multi-format, multi-channel monitors are a complete, exceptionally high quality SDI/CVBS stereo video/audio monitoring solutions available in compact two rackspace cabinets. There are numerous input and output features that make these units ideal for facility-wide monitoring of analog/digital audio and video signals. The two models are identical except that, when monitoring SDI type signals, the **VAMP2-SDA** model accepts only standard SD-SDI video signals, while the **VAMP2-MDA** model accepts either standard SD-SDI *or* high definition HD-SDI video signals. Both units allow pushbutton selection of one of four SDI groups for monitoring.

In addition to the respective SDI monitoring capabilities, both models are capable of monitoring AES and Analog audio signals separately or in conjunction with CVBS and SDI video signals. In "Mix Mode" the individual input channels may be separately selected to be monitored through the left and/or right speakers. Color coded LEDs above each level meter bargraph display indicate which channels are selected for monitoring and to which speaker they are assigned. Audio phase relationships are indicated by a bi-color (RED/GREEN) LED on the front panel. Audio input selection status is indicated by LEDs in close proximity to the selection buttons. Analog or AES audio signals may be monitored separately from the SDI and CVBS video inputs or a "Track Video" feature may be used to automatically route audio input to "follow" the video input signals.

Four high-resolution 53-segment LED bargraph level meters exhibit simultaneous VU and PPM display characteristics to provide wide-range visual monitoring of audio signals. Meters are tri-color (red/amber/green) and have a dynamic range of 65 dB. Bargraph brightness is adjustable using controls located on the top cover.

Other features include internal/external speaker selection, encoded composite video output from the SDI input (scaled when input is HD, letterboxed for display on a 4:3 monitor) and (always available independent of monitoring selection) CVBS video output on BNC connector, AES output de-embedded from the selected SDI In (on either unbalanced HD-15 or balanced DB-25 connector), selectable AES input termination via rear panel DIP switches, metered analog audio output on a DB-25 connector, line output of the source selected for monitoring on the speakers on two XLR connectors, automatic sensing and configuration of NTSC or PAL video formats, and a headphone output jack.

Features

- 2U high: highest fidelity in minimum rackspace.
- 4" active matrix TFT LCD display with 4:3 aspect ratio.
- Autosensing of NTSC and PAL video formats.
- Four 53-segment Tri-color LED bargraph level meters displaying simultaneous VU and PPM characteristics.
- Two SD-SDI (VAMP2-SDA) or HD/SD-SDI (VAMP2-MDA) video inputs and two CVBS video inputs with A/B switching.
- Converts SDI video to CVBS (composite analog) video
- Monitors and de-embeds four audio channels and one video channel simultaneously.
- SD-SDI (SDA) or HD/SD-SDI (MDA) inputs with reclocked outputs, AES and CVBS audio inputs with loop-thru outputs.
- Auxillary Analog or AES audio inputs may be monitored separately or in conjunction with the video inputs
- Analog (composite) output of selected video source
- De-embeds HD/SD-SDI audio to AES and/or analog audio outputs
- Re-clocked HD/SD-SDI output and CVBS output de-embedded from the SDI input function regardless of other selection settings
- Digital signal status indication via LEDs
- LED indication of selection and mix settings
- Headphone output

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Applications

The **VAMP2-SDA** and **VAMP2-MDA** are ideally suited to provide high quality multi-channel digital and analog audio and video monitoring in a very compact form. Ideal for use in VTR bays, mobile production vehicles, teleconferencing installations, multimedia systems, satellite links, cable TV facilities, and on-air radio studios. Designed and manufactured in the U.S.A., these monitors are backed by a strong warranty and a satisfaction guaranteed return policy.

General Specifications

Analog Input Impedance:	27K Ω balanced, minimum
AES Termination (removable):	110 Ω bal./75 Ω unbal.
Analog Input Overload:	+24 dBu balanced
Analog Reference:	+8, +6, +4, or 0 dBu
Digital Reference:	-20, -18, or -9 dBFS
Meter Dynamics:	VU and PPM
AES Input Sampling Rate:	32-48 KHz, auto-select
AES D to A Converter:	24-bit low jitter
Peak Acoustic Output (@ 2 ft.):	96 dB SPL
Response, Sixth Octave:	80 Hz - 16 kHz ± 7 dB) (-10 dB @ 50 Hz, 22 kHZ)
Converted Analog Out S/N:	>90 dB
Converted Analog Out THD:	< 0.008%
Distortion, Electrical:	Less than 0.15% at any level below limit threshold
Hum and Noise, Analog:	Better than -68 dB below full output

Magnetic Shielding:	Less than 1 Gauss any adjacent surface
Input Connectors:	• **AES IN (Unbal.):** BNC (x4) • **AES IN (Bal.):** DB-25 • **HD/SD-SDI IN:** BNC (x2) • **CVBS IN:** BNC (x2) • **Analog IN:** DB-25
Output Connectors:	• **Selected Video OUT:** BNC • **AES OUT from SDI:** HD-15 (Unbal.) or DB-25 (Bal.) • **CVBS OUT (from SDI input):** BNC • **Metered Analog OUT:** DB-25 • **CVBS Loop OUT:** BNC (x2) • **SDI Loop OUT (reclocked):** BNC • **Selected Analog Audio OUT:** XLR-3F • **Speaker OUT:** Terminal Post (x2)
Power Consumption (Max):	50 W
AC Mains Input:	100-240VAC, 50-60Hz
Weight:	11.5 lbs. (8.2 kg)
Dimensions (HxWxD):	3.5 x 19 x 9.5 inches (88.9 x 482.6 x 241.3 mm)

4" Video Display Specifications

Screen Type:	LCD, active matrix TFT
Back Light:	Cold cathode fluorescent tube
Screen Size (Dim.):	4" diagonal (96 x 76 x 6.5 mm)
Aspect Ratio:	4:3
Display Format (dots x lines):	480 (Horiz.) x 234 (Vert.)
Dot Pitch:	0.171 (Wide) x 0.264 (High)
LCD Active Area:	82.1 mm x 61.8 mm
Color Configuration:	RGB Delta
Contast Ratio:	150 (typical)
Brightness:	250 NITs (cd/m^2)
Viewing Angle:	Top=10˚, Bottom=30˚, Right/Left=45˚
Video Signal:	NTSC 525/60 or PAL 625/50
Controls:	Tint, Color, Brightness, Contrast

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Section 2

Operation

Installation

Front Panel Features

Rear Panel Features

NOTE: Throughout the manual, the following terms are used to refer to **Serial Digital** (**SDI**) signals:

- **SD-SDI** = refers only to ***standard*** **SDI** (270 MB/s).
- **HD-SDI** = refers only to ***high-definition*** **SDI** (1.5 GB/s).
- **SDI** = refers to *either* **standard SDI** (SD-SDI, 270 MB/s) or **high defintion SDI** (HD-SDI, 1.5 GB/s).

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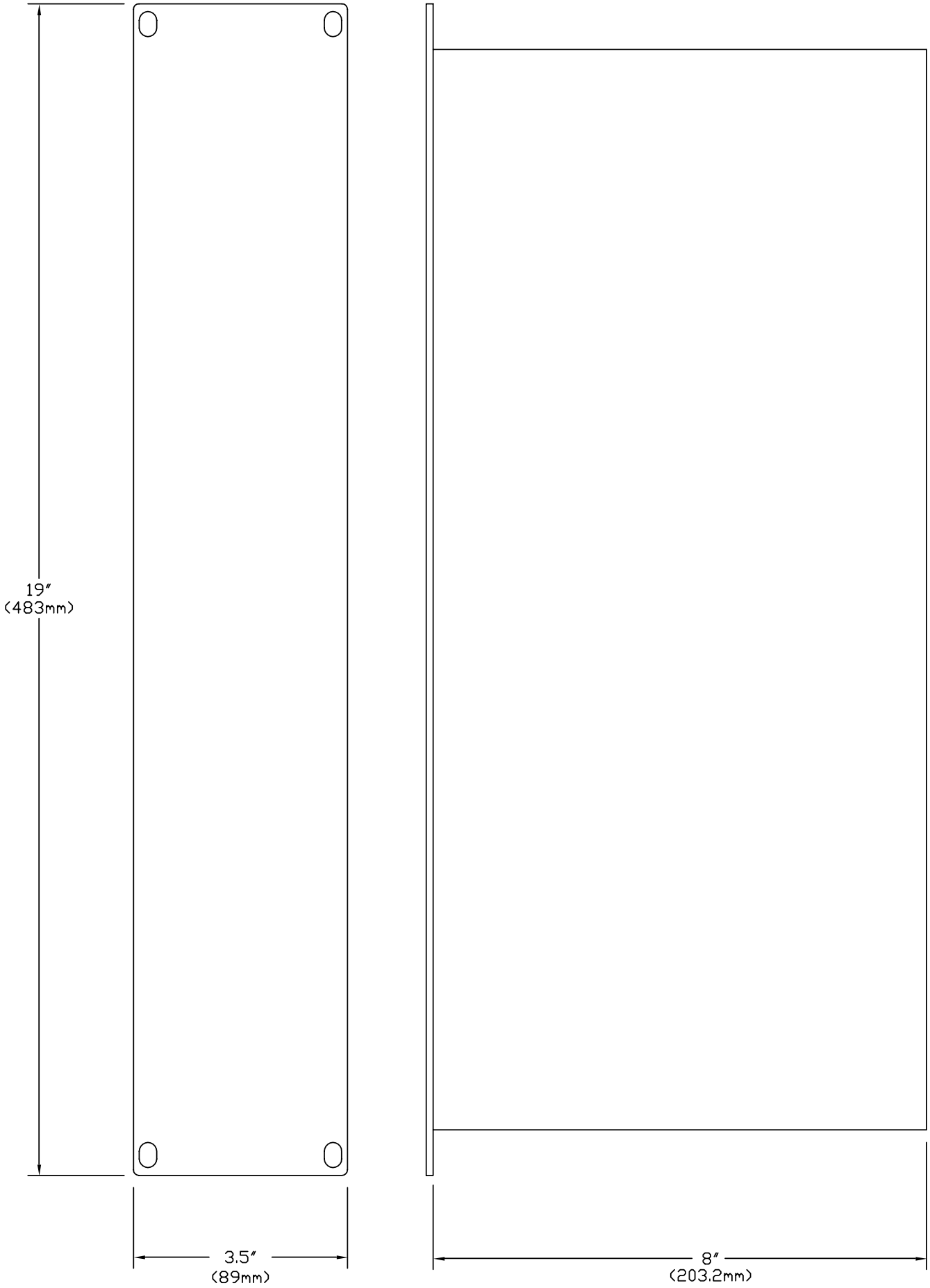

Figure-2a: VAMP2-SDA and VAMP2-MDA Unit Dimensions

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Installation

Unpacking

Unpack the unit from the shipping container and inspect all articles for shipping damage. If you find any damage, notify the shipping carrier immediately for claims adjustments.

Compare the shipping box contents to the packing slip. Contact a Panorama sales representative if there are any unexplained shortages.

Power Requirements

The unit is equipped with a world standard power supply that is capable of operating on **100-240 VAC @ 50-60 Hz**. Power consumption is **50 watts**, maximum.

Cooling and Airflow

It is recommended that you allow a 1RU (**1.75"** or **25 mm**) space above and below the unit for air circulation. No other special considerations for cooling are necessary as long as the ambient temperature inside the rack area does not exceed approximately **40°C** (**104°F**).

Rack Mounting

The unit rack mounts in a standard **EIA-310-D** specification **19"** (**483 mm**) rack and needs **2RU** (**3.5"** or **88.9 mm**) of space. (See **Figure-2a**, facing page, for unit dimensions.) Allow sufficient space at the unit rear for connector and cable clearance (approximately **4"**or **102 mm**). The unit weighs **18 pounds** (**8.2 kg**) and rack mounts from the front panel support rails. Rear support is not required.

LCD Viewing Position: Good image quality is assured if the video display is positioned so that viewing angles are between **+/- 45** degrees from the center axis in the horizontal plane (left/right). In the vertical axis, good image quality is obtained between **10 degrees** looking down and **30 degrees** looking up. Due to the nature of LCD's, there are certain anomalies, which can cause the displayed video to appear incorrect. If the viewer is outside the optimal LCD display viewing range, the contrast ratio, brightness, and color saturation will not be or may not appear to be, a true representation of the displayed video. Additional anomalies such as loss of resolution, apparent reversed video effect, and frame/field strobe effect with the CCFT backlight may also be observed. The LCD used is optimized for viewing from the 12 o'clock position relative to the plane of the video display screen. Typically, the unit is mounted at eye height so that the display is viewed by looking straight into it. Going beyond the specified viewing area can cause anomalies as mentioned above.

NOTE: In PAL mode operation, the LCD driver discards every seventh line of active video so an entire video frame fits within the display screen. This is normal with most LCD's currently on the market.

General Installation Recommendations

Recommended cable type for **analog video** signals is: **Belden 8281, Belden 1694A,** or equivalent.
Recommended cable type for **digital video** signals is: **Belden 1694A** or equivalent.

Recommended cable type for **analog audio** signals is: **Belden 9451** or equivalent.
Recommended cable type for **digital audio** signals is: **Belden 1800B** or equivalent.

Static Discharge: As with most electronic equipment, static discharges can damage components within the unit. Take precautions to ensure your installation environment is not subject to static discharges.

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Front Panel Features

Please refer to **Figure-2b** on the following page to familiarize yourself with the front panel features of the **VAMP2-SDA** and **VAMP2-MDA** front panel. The following sections describe these functions and are referenced, by number, to **Figure-2b**.

> **NOTE:** Throughout the manual, the following terms are used to refer to **Serial Digital** (**SDI**) signals:
> - **SD-SDI** = refers only to ***standard*** **SDI** (270 MB/s).
> - **HD-SDI** = refers only to ***high-definition*** **SDI** (1.5 GB/s).
> - **SDI** = refers to *either* **standard SDI** (SD-SDI, 270 MB/s) or **high defintion SDI** (HD-SDI, 1.5 GB/s).

1 Speakers (Left and Right)

The internal speaker system is comprised of two speakers (left and right).

2 Video Source Select Button and LED Indicators

This button (**VIDEO SOURCE**) is used to select a signal source for monitoring. There are three selections:

1) **SDI**
2) **CVBS 1**
3) **CVBS 2**

Repeated pressing of the **Source Select Button** will step through each of the three selections. One of the three indication LEDs will glow to indicate which signal source is selected for monitoring (**SDI**, **CVBS 1**, or **CVBS 2**).

When **SDI** is selected, one of the two available **SDI** inputs on the rear panel (**Item E**, Page **14**) may be selected for monitoring using the **SDI Input Select Button** (**Item 5**). Note that the **SDI LED** will glow GREEN if the selected **SDI** signal is "locked", and will glow RED if the signal is "unlocked".

When **CVBS 1** or **CVBS 2** is selected, one of the two corresponding **CVBS** inputs on the rear panel (**Item O**, page **17**) is selected for monitoring. See the **Audio Source Select Button** (**Item 11**, page **12**) for information about selection of audio inputs for video monitoring. Note that the selected **CVBS LED** will glow GREEN when selected.

3 Mix Assign Buttons (1-4)

Each of these four push buttons (**MIX ASSIGN**) is separately associated with one of each of the four level meters (**1**, **2**, **3**, and **4**). Each button is used to assign the channel monitored by the associated level meter to the left or right speaker mix *only* when both the left *and* right **Speaker Assign Buttons** (**Item 13**) are in **"Mix Mode"** (the 5th pushbutton cycle; See **Item 13**, page **12** for more information). When in **"Mix Mode"** the right and/or left **Mix LEDs** (**Item 14**, page **13**) will glow. When a channel is selected using these buttons, the **Channel LED** (**Item 15**, page **13**) above the associated level meter will glow GREEN when assigned to the left speaker, AMBER when assigned to the right speaker, or alternately GREEN/AMBER if assigned to both speakers.

4 Speaker Select Button (Internal/External) and Indication LED

This push-button (**SPEAKER**, **INT**/**EXT**) is used to toggle between the **Internal Speakers** (**Item 1**) or **External Speakers** connected to the **External Speaker Connectors** on the rear panel (**Item V**, Page **19**). When the **Internal Speakers** (**INT**) are selected for monitoring, the LED will *not* be lit. When the **External Speakers** (**EXT**) are selected, the LED will glow GREEN.

5 SDI Input Select Button and Indication LEDs

This button (**SDI SEL**) selects the **SDI** input (**IN 1** or **IN 2**) when the **Video Source Select Button** (**Item 2**) is set to **SDI** *or* the **Audio Source Select Button** (**Item 11**, page **12**) is set to **SDI**. When the **SDI 1** source is selected for monitoring, the LED will *not* be lit. When the **SDI 2** source is selected, the LED will glow GREEN.

6 Headphone Jack

This jack accepts a standard "mini" stereo (ring/tip/sleeve) plug. Select the headphone audio sources as you would for the internal speakers. When you plug in headphones, the internal speakers will mute.

7 LCD Video Display Controls

Adjust the LCD video display image with these four controls:

- **TNT**: Tint; adjust this trim pot for desired image color hue (NTSC only).
- **COL**: Color Saturation; adjust this knob for desired amount of image color saturation.
- **BRT:** Brightness; adjust this knob for desired screen brightness.
- **CNT**: Contrast; adjust this trim pot for desired image scene dark-to-bright contrast.

8 LCD Video Display

View input video sources through this 4" diagonal cold cathode active matrix TFT LCD display. Screen image parameters are adjustable by four manual controls (**Item 7**). See the **Rack Mounting** section on page **9** for information regarding viewing angles and LCD display characteristics.

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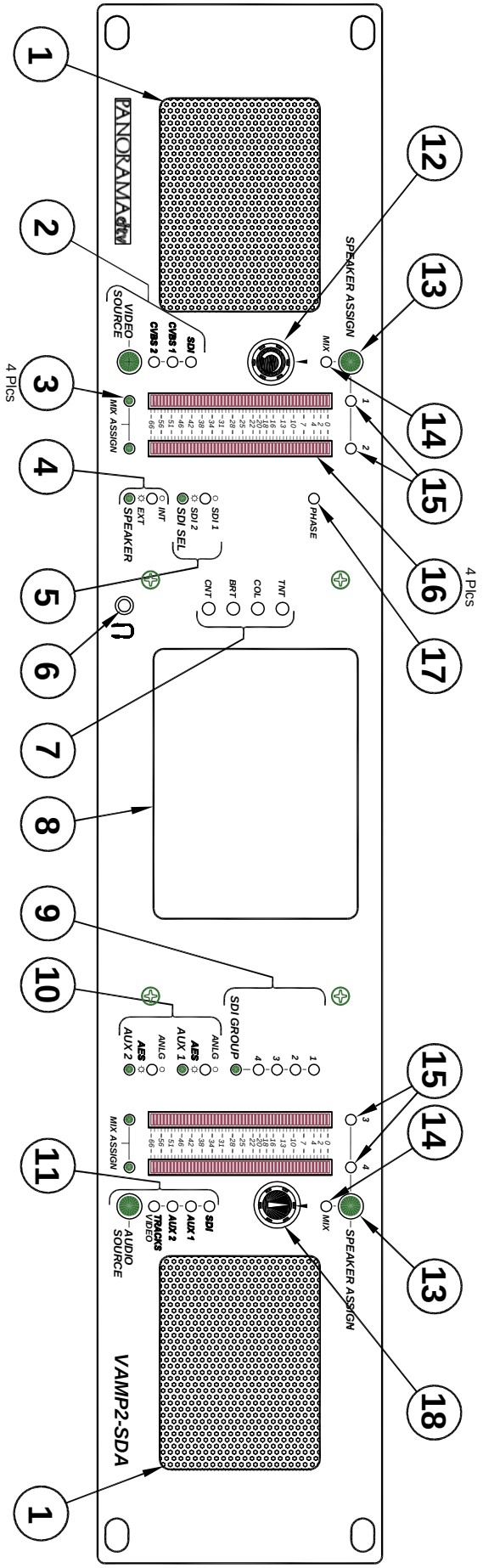

Figure-2b: Front Panel Features

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Front Panel Features

9 SDI Group Select Button

This button (**SDI GROUP**) selects which **SDI Group** (**1**, **2**, **3**, or **4**) will be chosen for monitoring when either the **Video Source Select Button** (**Item 2**) or **Audio Source Select Button** (**Item 11**) is set to **SDI** . One of the four LEDs will glow GREEN to indicate the selected group.

10 Audio Analog/AES Select Buttons and Indication LEDs

These two push buttons (**AUX 1** and **AUX 2**) are used to toggle between the **AES** inputs (**AES**) and **Analog** inputs (**ANLG**) for each **AUX** input section (**AUX 1** and **AUX 2**) on the rear panel. When the **Analog** input is selected, the respective indication LED is *not* lit. When the **AES** input is selected, the respective indication LED will glow GREEN.

For information on the **AES** inputs, see **Item I**, page **16** and **Item T**, page **19**. For information on the **Analog** inputs, see **Item K**, page **16**. For information on selection of the **AUX** inputs, see the **Audio Source Select Button** (**Item11**).

11 Audio Source Select Button and Indication LEDs

This push button (**AUDIO SOURCE**) is used to step through the four audio sources as follows:

1) SDI = Monitors the audio as input to the **SDI** inputs on the rear panel.

2) AUX 1 = Monitors the audio as input to the **AUX 1** (**Analog** or **AES**) inputs on the rear panel.

3) AUX 2 = Monitors the audio as input to the **AUX 2** (**Analog** or **AES**) inputs on the rear panel.

4) TRACKS VIDEO = This setting will monitor the **AUX** audio source which is associated with the selected **CVBS** video source. The table below shows the **AUX** inputs which are associated with the **CVBS** inputs with this setting:

Video Source	Audio Source
SDI	SDI
CVBS 1	AUX 1
CVBS 2	AUX 2

AUX Section	AES Inputs	Analog Inputs
AUX **1**	AES **1**	Channels **1-2**
	AES **2**	Channels **3-4**
AUX **2**	AES **1**	Channels **5-6**
	AES **2**	Channels **7-8**

12 Volume Control

This adjusts the loudness of the audio reproduced by the internal speakers or connected headphone. Clock-wise rotation of this control increases the loudness of the monitored audio.

13 Speaker Assign Buttons (Left and Right)

The general function of each of these two buttons (**SPEAKER ASSIGN**) is to assign any single channel or group of channels (4 maximum) seperately to each of the two speakers (left and right). With each push the following will happen:

Left Speaker Assign Button: **Note:** See page **13** for descriptions of **Items 14** and **15**.

1st push - **Channel 1** LED (**Item 15**) lights GREEN; signal is assigned to LEFT speaker.

2nd push - **Channel 2** LED (**Item 15**) lights GREEN; signal is assigned to LEFT speaker.

3rd push - **Channel 3** LED (**Item 15**) lights GREEN; signal is assigned to LEFT speaker.

4th push - **Channel 4** LED (**Item 15**) lights GREEN; signal is assigned to LEFT speaker.

5th push - **Left Mix LED** (**Item 14**) lights up; use **Mix Assign Buttons** (**Item 3**, page **10**) to assign channels to speaker mix as desired.

6th push - Cycles to beginning (same as 1st push).

Right Speaker Assign Button: **Note:** See page **13** for descriptions of **Items 14** and **15**.

1st push - **Channel 1** LED (**Item 15**) lights AMBER; signal is assigned to RIGHT speaker.

2nd push - **Channel 2** LED (**Item 15**) lights AMBER; signal is assigned to RIGHT speaker.

3rd push - **Channel 3** LED (**Item 15**) lights AMBER; signal is assigned to RIGHT speaker.

4th push - **Channel 4** LED (**Item 15**) lights AMBER; signal is assigned to RIGHT speaker.

5th push - **Right Mix** LED (**Item 14**) lights up; use **Mix Assign Buttons** (**Item 3**, page **10**) to assign channels to speaker mix as desired.

6th push - Cycles to beginning (same as 1st push).

Note: When the same channel is assigned to both LEFT (GREEN LED) and RIGHT (AMBER LED) speakers, the **Channel LED** (**Item 15**) for that channel will alternately glow GREEN *and* AMBER.

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Front Panel Features (Cont.)

14 Mix LEDs (Left and Right)

When the left and/or right **Speaker Assign Button** (**Item 13**, page **12**) is pushed a *5th* time in it's cycle, its associated **Mix LED** (**MIX**) will light up GREEN to indicate that channels may be added to that speaker mix (**Mix Mode**) by pushing the **Mix Assign Buttons** (**Item 3**, page **10**) located under the **Level Meter Bargraph Displays**.

Although you can turn on just one **Mix LED** (without the other), *both* **Mix LEDs** must be on (see **Item 3**, page **10**) for the **Mix Mode** to function.

15 Channel LEDs (1-4)

These four LEDs (**1**, **2**, **3**, **4**) indicate when the associated channel is assigned to one or both speakers. When these LEDs glow GREEN the channel is assigned to the *left* speaker, when glowing AMBER the channel is assigned to the *right* speaker, and when it glows alternately GREEN and AMBER then the channel is assigned to *both* left and right speakers. The LEDs are unlit when the channel is not assigned to either speaker.

16 Audio Level Meter LED Bargraph Displays (1-4)

Audio levels are visually displayed via these four high-resolution, 53-segment, tri-color (red, amber, green) LED bargraph display meters. There are *four* level meters labeled **1**, **2**, **3**, and **4** and they correlate to the *four* channels of the selected source. Dynamic range for these 53-segment meters is -66 dB and they simultaneously display both **VU** and **PPM** ballistic characteristics.

Contact the factory for additional information concerning level meter scales and ballistics**.**

17 Phase Indication LED

This LED (**PHASE**) indicates the phase status of the audio signals assigned to the speakers. This LED indicates the *average* phase condition by glowing GREEN for *in-phase* conditions, or RED for *out-of-phase* conditions. While it is normal for stereo signals to contain some intermittant instanateous out-of-phase and in-phase conditions, a steady red glow of this LED indicates an *out-of-phase* alarm condition.

18 Balance Control

This adjusts the volume balance between the left and right speakers.

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Rear Panel Features

Please refer to **Figure-2c** on the following page to familiarize yourself with the rear panel features of the **VAMP2-SDA** and **VAMP2-MDA**. The following sections describe these features and are referenced, by letter, to **Figure-2c**.

A Power Connector

Attach a standard **IEC-320** power cord between this connector and mains power.

B OPT A Rotary switch **(MDA Model)** *or* Reset Button **(SDA Model)**

In the **SDA** model, this opening features a recessed push-button with a momentary reset function for the **SD-SDI** input module. Pressing the button with a small screwdriver or other tool will reset the **SD-SDI** input functions of the **SDA** unit.

In the **MDA** model, this opening features a 10-position rotary switch for selecting related functions as shown in the following table:

Position	OPT A SWITCH Function (MDA Models Only)
0	Bootload
1	CVBS Output is NTSC
2	CVBS Output is PAL
3	CVBS Output is NTSC, Letterboxed When Input is HD
4	CVBS Output is PAL, Letterboxed When Input is HD
5	Reserved
6	Reserved
7	Reserved
8	Hardware Reset Mode
9	Hardware Reset Mode

When set to positions **1**, **2**, **3**, or **4**, the signals from the **CVBS Video Output** (**Item D**) *and* the video supplied to the internal LCD will be the format described for each position in the table (**NTSC** or **PAL**) regardless of the input format. When set to positions **3** or **4**, **HD-SDI** input signals are letterboxed, but **SD-SDI** input signals are not. Setting the switch to positions **8** or **9**, will force a hardware reset on the **video scaler** (**919213**) *and* **audio de-embedder** (**919212**) modules.

C OPT B Rotary Switch

The **OPT B** access opening features a 10-position rotary switch, which is reserved for future options and should be left at the factory position **1**.

D CVBS Video Output (From SDI) Connector

This female BNC connector outputs **CVBS** (composite) video encoded from the selected **SDI** input (**Item E**).

In the **MDA** model, **HD-SDI** signals are down-converted for proper representation in composite video format. See **Item B** for how to select the *type* of **CVBS** video output for the **MDA** model. A switch (**Item F**, page **16**) is also installed in the **MDA** model to allow selection of the **910213 video scaler** for communication through the **RS232 #2** connector (**Item G**).

This output functions regardless of other selection settings. This feature enables encoding of the **SDI** signal to **CVBS** independent of other monitoring functions (as long as a valid **SDI** signal is present at the associated input).

E SDI Input Connectors

In the **SDA** model, only standard **SD-SDI** audio/video signals are accepted at these two BNC input connectors. In the **MDA** model, these two BNC connectors (**IN1** and **IN2**) accept both high-definition **HD-SDI** *and* standard **SD-SDI** audio/video signals (**HD-SDI** signals are automatically down converted for monitoring).

To monitor *video* from these inputs, the **Video Source Select Button** (**Item 2**, page **10**) should be set to **SDI**, the **SDI Input Select Button** (**Item 5**, page **10**) should be set to the **SDI** input of choice (**IN 1** or **IN 2**), and the **SDI Group Select Button** (**Item 9**, page **10**) should be used to select the **SDI Group** of choice (**1**, **2**, **3**, or **4**).

To monitor *audio* (only) from these inputs, the **Audio Source Select Button** (**Item 11**, page **12**) should be set to **SDI**, the **SDI Input Select Button** (**Item** 5, page **10**) should be set to the **SDI** input of choice (**IN 1** or **IN 2**), and the **SDI Group Select Button** (**Item 9**, page **10**) should be used to select the **SDI Group** of choice (**1**, **2**, **3**, or **4**).

Even if **SDI** is *not* selected for monitoring through the unit, the user may still select the **SDI** input (**IN 1** or **IN 2**) and utilize the **SDI Reclocked Output Connector** (**Item E**) and **CVBS Output (from SDI Input) Connector** (**Item P**) regardless of other settings. This feature enables processing of the **SDI** signal independant of the units other monitoring functions.

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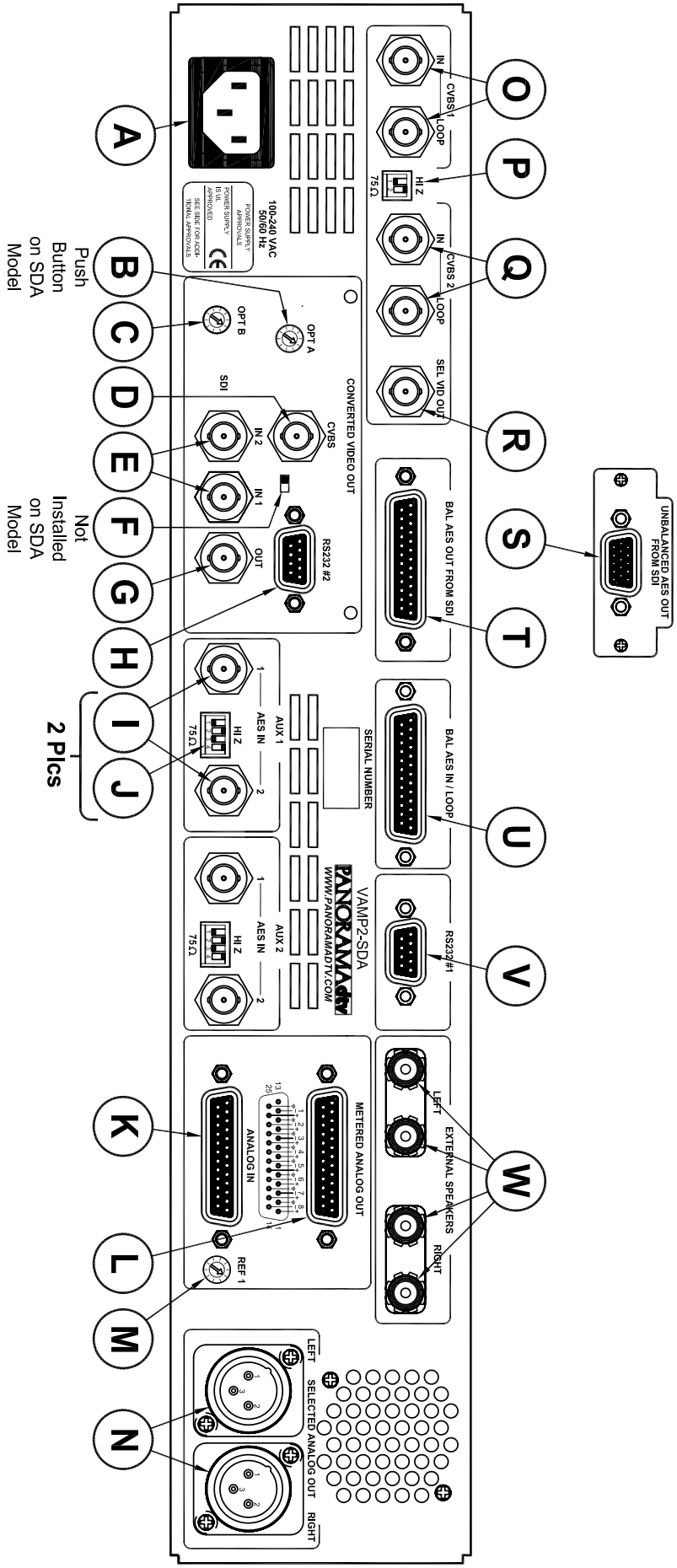

Figure-2c: Rear Panel Features

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Rear Panel Features

F Select Switch for RS232 #2 Connector **(MDA Model only)**

This 2-position slide switch is used to select the **910213 video scaler** (**UP** Arrow) or **919212 audio de-embedder** (**DOWN** Arrow) modules for communication through the **RS232 #2** connector (**Item H**).

G SDI Re-Clocked Output Connector

This BNC connector (**OUT**) outputs a re-clocked (regenerated) **SDI** signal derived from the selected **SDI** input (**IN 1** or **IN 2**). This output functions regardless of other selection settings. This feature enables output of the re-clocked **SDI** signal independant of the units other monitoring functions (as long as a valid **SDI** signal is present at the associated input).

H RS232 #2 Connector

In the **SDA** model, this DB-9 connector is used for downloading programming, setup, and diagnostic information into and out of the **919212-2 audio de-embedder**. In the **MDA** model, it is used for downloading programming, setup, and diagnostic information into and out of either the **910213 video scaler** or **919212 audio de-embedder** modules. The **MDA** model also features a 2-position slide switch (**Item F**) for selecting which module communicates through the connector.

I AES Unbalanced AUX Audio Input Connectors

The four BNC connectors in the **AUX 1** and **AUX 2** input sections accept standard **AES** audio signals and are configured for unbalanced connections (**75 Ω** impedance). See the **Audio Source Select Button** (**Item 11**, page **12**) and the **Audio Analog/AES Select Button** (**Item 10**, page **12**) for how to select these inputs for monitoring.

Note: Signals cannot be simultaneously input to both the *balanced* and *unbalanced* connectors within the same **AUX** input *section* (**AUX 1** or **AUX 2**).

J AES Input Termination DIP Switch

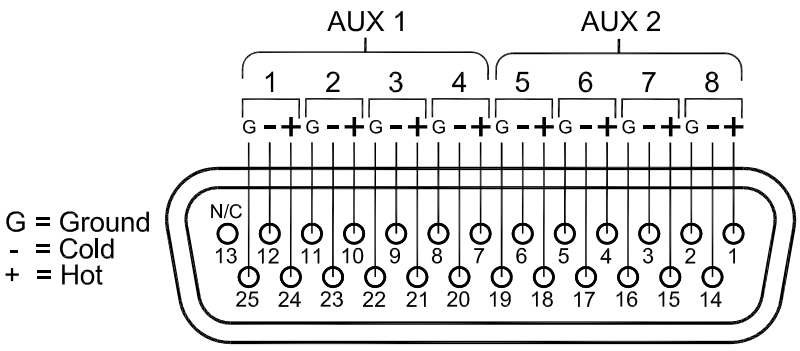
Termination for both pairs (**AUX 1** and **AUX 2**) of the **AES** inputs (**AES IN, 1** and **2**) is adjustable via the 4-position DIP switch modules located between each pair of input connectors. The switch section nearest the associated connector is responsible for setting the termination for that connector. The switch is moved DOWN (**75 Ω**) to **Terminate** the connector and UP (**HI Z**) to **Unterminate** the connector. See diagram below for switch ID and settings. Note that sections **1** and **3** of both DIP modules should be left in the UP position and *not used.*

VAMP2-SDA AES Input Termination

Left DIP Module (S2) AUX 1	Right DIP Module (S2) AUX 2
Set "Up", do not use **AUX 1, AES IN 1** Set "Up", do not use **AUX 1, AES IN 2** DOWN = Terminated UP = Unterminated **1 2 3 4**	Set "Up", do not use **AUX 2, AES IN 1** Set "Up", do not use **AUX 2, AES IN 2** DOWN = Terminated UP = Unterminated **1 2 3 4**

K Analog Input Connector

This DB-25 connector (**ANALOG IN**) accepts standard **Analog** signals and is configured for balanced connections (**110 Ω** impedance). See below for pin-out information. See the **Audio Source Select Button** (**Item 11**, page **12**) and the **Audio Analog/AES Select Button** (**Item 10**, page **12**) for information on selecting this input for monitoring.



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Rear Panel Features

L Metered Analog Output Connector

This DB-25 connector (**METERED ANALOG OUT**) outputs the **Analog** signals which are selected for display in the level meters. See diagram under **Item K** for pin-out information.

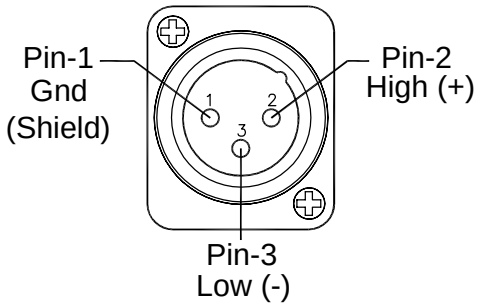
M Ref 1 Select Rotary Switch

This recessed 10-position rotary switch (**REF 1**) sets the reference level for the unit. See below for setting information.

Position	Function	
	Analog	Digital
0	+8 dBu	-20 dBFS
1	+4 dBu	-20 dBFS
2	0 dBu	-20 dBFS
3	0 dBu	-18 dBFS
4	+6 dBu	-9 dBFS
5	Not Used	
6	Not Used	
7	Not Used	
8	Software Upgrade	
9	Software Upgrade	

N Selected Analog output Connectors (Left and Right)

These two male 3-pin XLR connectors (**SELECTED ANALOG OUT**) are analog outputs of the source as selected for the left and right speakers. See diagram below for pinout information.



O CVBS Video Input and Loop-Thru Connectors (1 and 2)

These BNC connector inputs accept standard **CVBS** (composite analog) video signals. There are two **CVBS** input sections (**CVBS 1** and **CVBS 2**) and each section has an input (**IN**) and loop-thru (**LOOP**) on BNC connectors. See **Item P** for termination settings.

In order to monitor the video from these inputs, the **Video Source Select Button** (**Item 2**, page **10**) must be set to the **CVBS** input *section* of choice (**CVBS 1** or **CVBS 2**).

P Termination DIP Switch (for CVBS Video Input 1 and 2)

Termination for the **CVBS** (composite analog) input connectors (**Item O**) is adjustable via the 2-position DIP switch module located between the two **CVBS** input sections (**CVBS 1** and **CVBS 2**). The switch section *nearest* the associated connector is responsible for setting the termination for that connector (**CVBS 1** = *Left*, **CVBS 2** = *Right*).

The switch is moved **DOWN** to **terminate** the connector and **UP** to **unterminate** the connector.

Q Selected Video Out Connector

This BNC connector (**SEL. VID OUT**) outputs a **CVBS** (composite analog) video signal of whatever source is selected for monitoring through the video display and is configured for unbalanced **75** Ω connections.

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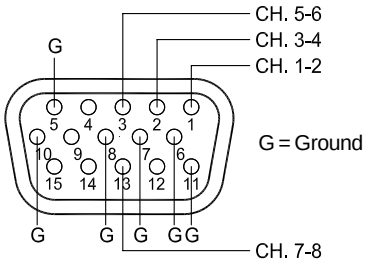
Rear Panel Features

R AES *Unbalanced* Output (From SDI Input) Connector **(Standard HD-15)**

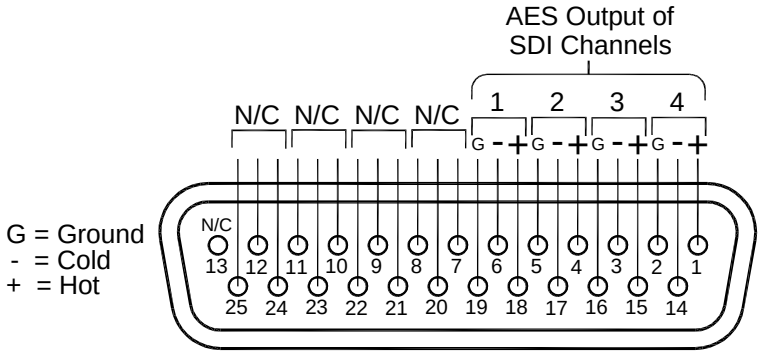
AES signals de-embedded from the selected **SDI** input are output from this **HD-15** connector, which is configured for *unbalanced* connections. See the table and diagram below for pinout information. See **Item S** for instructions on how to replace this standard *unbalanced* connector with the optional integrated **DB-25** *balanced* connector.

Pin#	Channel	Typical VGA to BNC Color
1	1 and 2	Red
2	3 and 4	Green
3	5 and 6	Blue
13	7 and 8	Black
5, 6, 7, 8, 10, 11	Grounds	-



S AES *Balanced* Output (From SDI Input) Connector **(Optional DB-25)**

AES signals de-embedded from the selected **SDI Input** are output from this **DB-25** connector, which is configured for *balanced* connections (**110 Ω** impedance). When installed, this *balanced* **DB-25** connector replaces the *unbalanced* **HD-15** connector in **Item R**. Pinout information for the *balanced* **DB-25** connector is shown below.



Installing the Optional DB-25 Balanced Connector

The **DB-25** *balanced* output option may be installed without need for additional parts as follows:

1) Remove the top cover from the chassis of the **VAMP2-SDA** unit (set the screws aside for later reassembly).
2) The standard **HD-15** connector is attached to the rear panel by a plate. Under this connector and plate is the cutout for the optional **DB-25** connector. Inside the unit, the **HD-15** connector (**Item R**) has an output PCB module connected to it. Unplug from the other end of this module the female **DB-25** connector (**Item S**). Note that the **DB-25** connector is connected to an internal ribbon cable.
3) Remove and set aside the two screws from the **HD-15** connector plate attached to the rear panel and remove the connector/plate/module assembly from the unit.
4) Use the two screws removed from the disassembled **HD-15** connector plate to install the **DB-25** connector into the larger connector cutout now revealed.
5) Reassemble the top cover to the chassis.

NOTES:

The **DB-25** *balanced* option may be specified at time of order and the conversion performed at the factory.

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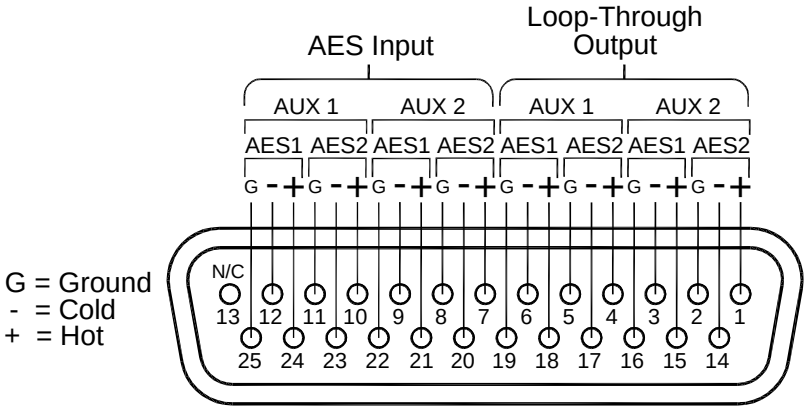
Rear Panel Features

T AES Balanced AUX Audio Input (with Loop-Thru) Connector

This DB-25 connector (**BAL. AES IN / LOOP**) accepts **AES** audio signals and is configured for *balanced* connections (**110 Ω** impedance). This connector includes the inputs for both audio input sections (**AUX 1** and **AUX 2**) and features internally connected passive loop-thru outputs of the input signals. See **Item J**, page **16** for **AES** input termination settings.

See the **Audio Source Select Button** (**Item 11**, page **12**) and the **Audio Analog/AES Input Select Button** (**Item 10**, page **12**) for how to select this input for monitoring. Pinout information for this connector is shown below.

Note: Signals cannot be simultaneously input to both the *balanced* and *unbalanced* connectors within the same **AUX** input *section* (**AUX 1** or **AUX 2**).


AES Input
Loop-Through Output
AUX 1
AUX 2
AUX 1
AUX 2
AES1 AES2 AES1 AES2 AES1 AES2 AES1 AES2
G - + G - + G - + G - + G - + G - + G - + G - +
N/C
13 12 11 10 9 8 7 6 5 4 3 2 1
25 24 23 22 21 20 19 18 17 16 15 14
G = Ground
- = Cold
+ = Hot

U RS232 #1 Connector

This DB-9 connector is used for downloading the user interface, unit functionality, **AES** programming, setup, and diagnostic information into and out of the unit.

V External Speaker Connectors (Left and Right)

Connect external speakers here using these terminal posts (**EXTERNAL SPEARERS**, **LEFT** and **RIGHT**). The *left* pair outputs the signals as selected for the *left* speaker, and the *right* pair outputs the signals as selected for the *right* speaker. Terminal posts in each output pair are color coded for polarity; RED is *positive* (left post) and BLACK is *negative* (right post). An external amplifier is not needed to drive the external speakers.

In order to monitor audio through the **external** speakers, the **Speaker Select Button** on the front panel (**Item 4**, page **10**) must be set to **EXT** (the LED will glow GREEN).

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Section 3

Technical Information

VAMP2-SDA and VAMP2-MDA Interconnect Block Diagram

VAMP2-SDA and VAMP2-MDA Signal Flow Block Diagram

NOTE:
PCB layout and schematic support documentation is available upon request.

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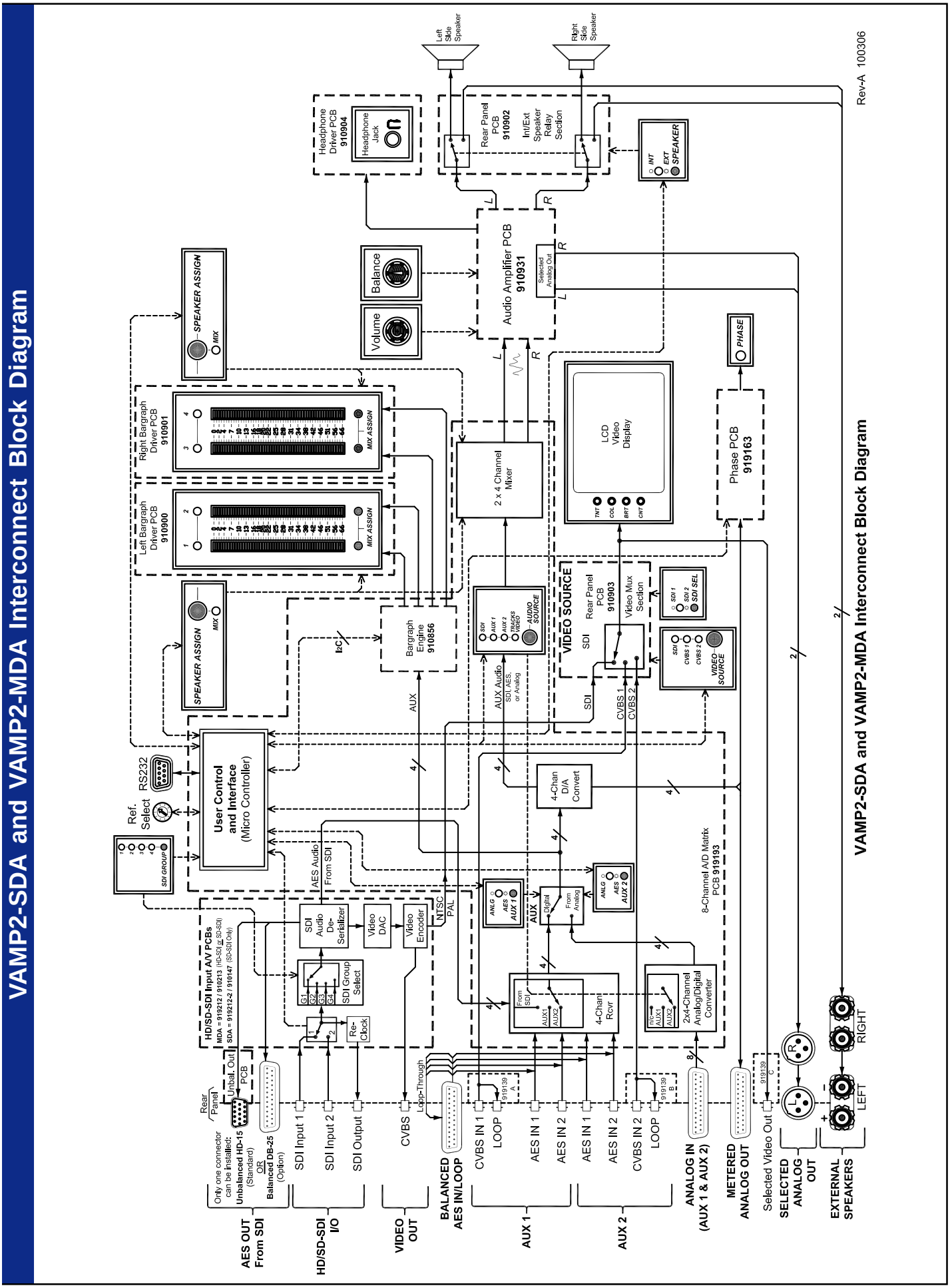

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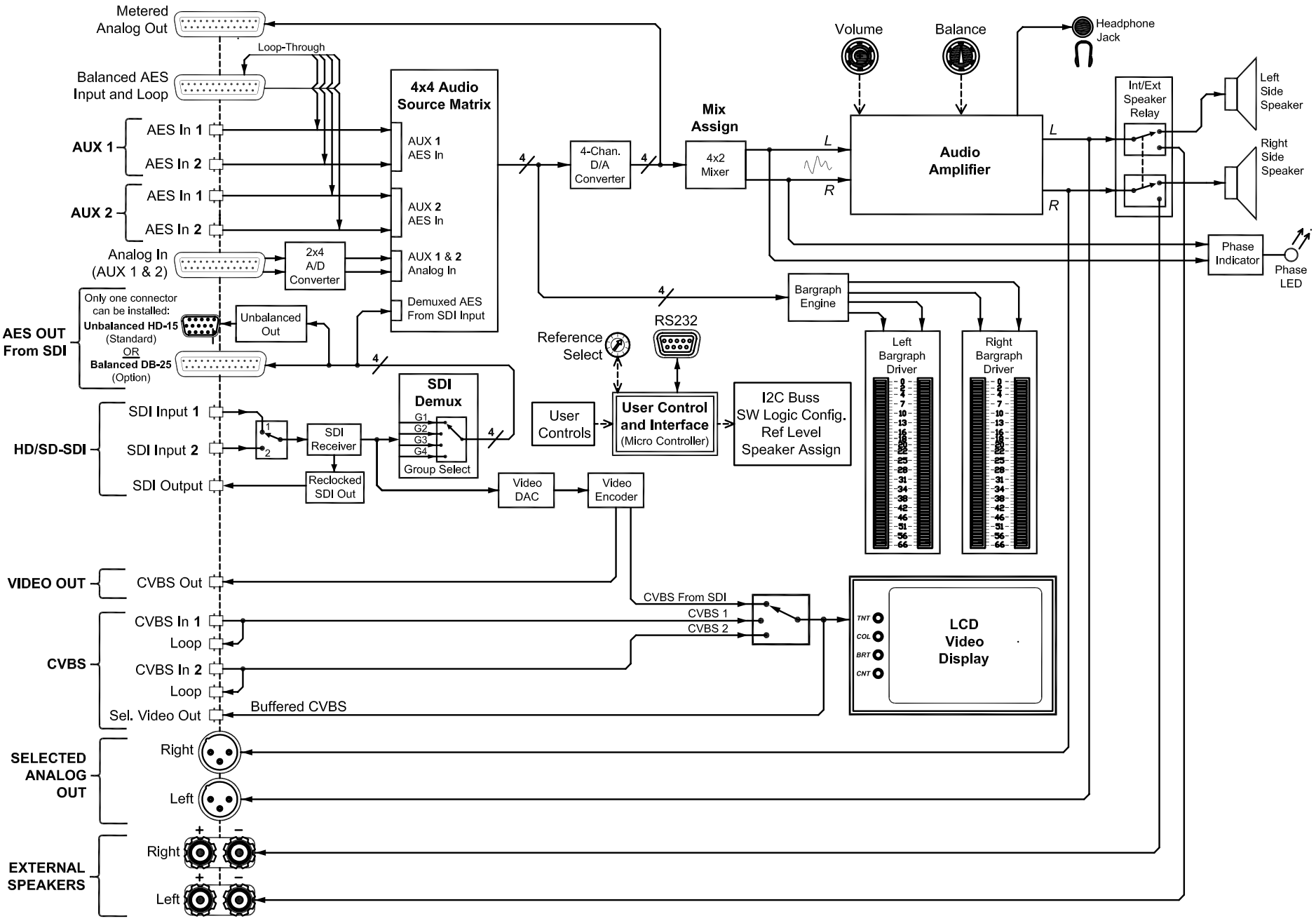
VAMP2-SDA and VAMP2-MDA Signal Flow Block Diagram



VAMP2-SDA and VAMP2-MDA Signal Flow Block Diagram

Rev-A 100306

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PANORAMAdtv
31055 Huntwood Avenue
Hayward, CA 94544
Phone: **(510) 589-5676**
Fax: **(510) 870-0811**
US Toll-Free: **1-888-596-4537**
web: **www.panoramadtv.com**
e-mail: **sales@panoramadtv.com**

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